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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,172

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Stephane Rimaux

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01/19/2007

NICOLAS E. SECKEL

Patent Attorney

1250 Connecticut Avenue, NW Suite 700

WASHINGTON, DC 20036

EXAMINER

GOLDFARB, JONATHAN A

ART UNIT

PAPER NUMBER

3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/538,172	Applicant(s) RIMAU, STEPHANE	
	Examiner Jonathan Goldfarb	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 1-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

-DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in France on 04 Feb 2003. It is noted, however, that applicant has not filed a certified copy of the FR-0301273 application as required by 35 U.S.C. 119(b).

Oath/Declaration

2. The oath is objected to as being informal. It lacks authentication by a diplomatic or consular officer of the United States; 37 CFR 1.66(a). This informality can be overcome by filing either a declaration under 37 CFR 1.68, or a new properly authenticated oath under 37 CFR 1.66. The new oath or declaration must properly identify the application of which it is to form a part, preferably by application number and filing date in the body of the oath or declaration. See MPEP §§ 602.01 and 602.02.

It does not include the notary's seal and venue.

It does not have a ribbon properly attached.

3. Applicant is now required to submit a substitute declaration or oath to correct the deficiencies set forth *in this communication*. The substitute oath or declaration must be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability" (PTO-37). Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136. Failure to timely file the substitute declaration (or oath) will result in **ABANDONMENT** of the application. The transmittal letter accompanying the

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declaration (or oath) should indicate the date of the "Notice of Allowance" (PTOL-85) and the application number in the upper right hand corner.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

5. The disclosure is objected to because of the following informalities: (h) Brief Description of the Several Views of the Drawing(s) is not given.

Appropriate correction is required.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method of CVT Control for Noise Reduction in a Vehicle.

7. Claim 1 objected to because of the following informalities: "ration (ω)" should be "rotation (ω)," and "estimated values (P1, V, w)" should be "(P1, V, ω)". Appropriate correction is required.

8. The claims are objected to because the lines are crowded too closely together, making reading difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-18 rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a *specific and substantial* asserted utility or a well established utility. While variables are listed, they are for unknown values and unknown functions. The function of control of the engine output shaft rpm value based on estimated values is unknown. In addition, "the moving average of the gear ratio" is understood to be unitless, and is claimed to require comparison with threshold values that are explained in the specification to be km/h per 1000 rpm. For

the above reasons, it would not be possible for one of ordinary skill in the art to be able to make use of this method for tangible and repeatable results.

11. Claims 4-6 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. This effectively claims a *duration*, and is a mathematical rule that describes a natural occurring phenomenon, i.e. the passage of time. Please restate the claim in more explicit terms. It is suggested that claims 5 and 6 be inserted into claim 4.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1-18 rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a *specific and substantial* asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

13. Claim 1-18 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for estimating values, does not reasonably provide enablement for threshold values. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to *use* the invention commensurate in scope with these claims. Threshold values are explicitly

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stated in the specification and in claim 3, but not in claims 1 or 2. Thus any values appear to be acceptable for the first two claims. It follows that the transient mode of claim 1 would be impossible to use.

14. Claim 17-18 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for estimating values, does not reasonably provide enablement for slope estimation. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Road slope may vary from flat to one of great roughness, and may oscillate between positive and negative slope within a short or long distance. Therefore, a detailed explanation of slope estimation as intended for this invention is necessary for enablement.

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1-18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. The terms "threshold value," "estimating the value," "lies outside the range," and "substantially equal to" are examples of terms in claims 1, 3-7, 10-15 that are relative terms which render the claim indefinite. The terms "estimating the value," "lies outside the range," and "substantially equal to," among others, are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the

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invention. These terms and other similar terms affect and make indefinite the method presented herein, as this method may be applied to the full range of applications for and sizes of vehicles and their steering systems. A description of values, ranges, etc. and their bounds, such as criteria for selecting these values and ranges, is necessary.

Specific mention is necessary for claims 14 and 15, in order to inform the applicant that "said range of predetermined amplitude (E)," and "said amplitude (E) is substantially equal to 50 rpm" conflict with the aforementioned "gear ratio (L) is limited at each instant to lie within a range of values." While gear ratio can be expressed in terms of km/h per 1000 rpm [specification, p. 5, lines 15-22], the ratio itself is unitless. Thus the amplitude as understood above is both meaningless and in conflict with above text for gear ratio range. Please make necessary corrections.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

—(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1, 2, 4-9, and 14-15 rejected under 35 U.S.C. 102(b) as being anticipated by Osanai (US 4,704,683). Osanai discloses "a method of controlling a CVT of a motor vehicle" with permanent mode with an average gear ratio lying between two threshold values, and a transient mode with an average gear ratio lying outside two threshold values [abstract].

Regarding claim 2, the absolute value of each of the two threshold values is equal [col. 8, claim 5].

Regarding claim 4, a duration of the transient mode is between two other threshold values [Fig. 1; col. 6, lines 16-40; col. 8, claim 6].

Regarding claim 5, the third threshold value is substantially equal to 0.3 s [Fig. 1], and the fourth threshold value is substantially equal to 0.7 s [Fig. 1]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the standard values for transient shift duration as practiced in the industry, as represented in Figure 1.

Regarding claim 7, the absolute value of a variation of a gear ratio in transient mode is between two other threshold values [col. 8, claims 4-6].

Regarding claim 8, the gear ratio variation direction is determined and, for a positive variation, threshold values 1 and 2 are reassigned to values 5 and 6 [abstract], and for a negative variation, threshold values 3 and 4 are reassigned to values 5 and 6 [col. 8, claims 4-6].

Regarding claim 9, value 1 > value 3; value 2 > value 4 [Fig. 1, Actual Engine Rotational Speed plot: Nx1, Nx2, Nx3].

Regarding claim 14, a gear ratio is limited in permanent mode [Fig. 1, 'speed ratio curve']. "The value of the gear ratio (L) is limited at each instant to lie within a range of values centered on a mean value equal to the gear ratio (L) at the initial instant of the operating stage in permanent mode plus the product of said mean variation (L') per unit time multiplied by the period of time between said initial instant and the instant

in question [ex. Fig. 1, speed ratio curve, t4-t5]. The calculation given in this claim describes the plot for speed ratio given in Figure 1.

Regarding claim 15, Osanai discloses an amplitude value that is substantially equal to 50 rpm [Fig. 1, 'speed ratio curve']. This is a standard value for gear ratio amplitude as practiced in the industry.

Please note that a gear ratio is defined by the equation of claim 14, which is a standard mathematical function that describes a standard physical phenomenon of a feature of a vehicle, and can thus be deemed inherent.

As to limitations which are considered to be inherent in a reference, note the case law of In re Ludtke, 169 U.S.P.Q. 563; In re Swinehart, 169 U.S.P.Q. 226; In re Fitzgerald, 205 U.S.P.Q. 594; In re Best et al, 195 U.S.P.Q. 430; and In re Brown, 173 U.S.P.Q. 685, 688.

20. Claims 1-3 rejected under 35 U.S.C. 102(b) as being anticipated by Nakawaki et al. (US 4,836,056). Nakawaki et al. discloses "a method of controlling a CVT of a motor vehicle" with permanent mode with an average gear ratio lying between two threshold values, and a transient mode with an average gear ratio lying outside two values [col. 2, lines 25-50].

Regarding claim 2, the absolute value of each of the two threshold values is equal [col. 2, lines 31-36].

Regarding claim 3, the period is greater than 1 second, and the threshold values are between 0.35 km/h and 0.45 km/h per 1000 rpm/s [Fig.s 7-9; col. 8, lines 42-53].

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 10-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Osanai (US 4,704,683) as applied to claims 1, 2, 4-9, and 14-15, and further in view of Nakawaki et al. (US 4,836,056). Osanai is silent regarding values or ranges for fixed threshold constants. Nakawaki et al. teaches several possible threshold values [Fig. 7; col. 8, lines 43-46]. In particular for claim 10, 'L23' is optionally equal to this value, as noted 'L12 or L23' and 'speed ratios r1, r2 or between two points' [col. 8, lines 47-53]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the threshold values in Figure 7 of Nakawaki et al. as threshold values for mean variation of gear ratio in order to limit gear ratio during transient mode so that shifting noise will be mitigated and then shifting comfort will increase.

23. Claim 16 rejected under 35 U.S.C. 102(b) as being anticipated by Osanai (US 4,704,683) as applied to claims 1, 2, 4-9, and 14-15, and further in view of Nakawaki et al. (US 4,836,056). Osanai is silent regarding an acceleration control variable. Nakawaki et al. teaches an acceleration control variable that represents the position of the accelerator pedal [col. 2, lines 30-32]. Therefore, it would have been obvious to one

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of ordinary skill in the art at the time of invention to use the acceleration control variable of Nakawaki et al. in order to control engine speed and determine an operational mode.

24. Claims 17-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Osanai (US 4,704,683) as applied to claims 1, 2, 4-9, and 14-15, and further in view of Guichard et al. (FR-2,729,343). Osanai is silent regarding road slope. Guichard et al. teaches of road slope estimation and its use as a variable along with vehicle speed and acceleration parameters [p. 5, lines 29-end; p. 6, lines 15-25]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the road slope estimation of Guichard et al. as an input to control gear ratio and so that shifting noise will be mitigated and then shifting comfort will increase.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Goldfarb whose telephone number is 571-272-7964. The examiner can normally be reached on M-Th 9-5, F ~2.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JG

04-Jan-07


JACK KEITH
SUPERVISORY PATENT EXAMINER